# Roza-Sunnyside Board of Joint Control

P.O. Box 810 ■ Sunnyside, WA 98944 ■ (509) 837-5141


August 31, 2006



Andrew Kolosseus
Water Quality Program
Washington State Department of Ecology
P.O. Box 47600
Olympia, WA 98504-7600

**Re: Irrigation System Aquatic Weed Control – State Waste Discharge General Permit**

Dear Mr. Kolosseus:



On behalf of the Roza Irrigation District (RID) and the Sunnyside Valley Irrigation District (SVID), the Roza-Sunnyside Board of Joint Control (RSBOJC) offers comments on the Draft NPDES Permit dated August 8, 2006:

- C4. A: We are disappointed and concerned to see the "Point of Compliance" defined as "... the upper-most extent of anadromous salmonid distribution." We object to this definition for the following reasons:
    - The definition relies upon Washington Department of Fish and Wildlife (WDFW) maps which are difficult to find and download on the internet and are inaccurate. By WDFW's own admission the maps are based on data that has not been ground-truthed and won't be until after the next permit is issued.
    - Salmon and Trout Populations versus Occurrence: The Clean Water Act and water quality standards are designed to protect populations of fish. We question whether the fish seen in the conveyances represent populations (sustaining runs). They may be strays or fish transiently attracted to the flows. A population must be a self-sustaining population – "self-sustaining" is an important criterion.
    - We assume that Ecology is bound to follow the Clean Water Act in NPDES permits and protect populations. The Washington Department of Fish and Wildlife (WDFW) has a different mission in protecting, conserving, and perpetuating fish; so use of maps generated by WDFW may be a de facto extension of WDFW policy.

- Reliability of Biological Observations: We checked the maps a couple of years ago concerning Sulphur Creek Wasteway, Spring Creek Wasteway, and Snipes Creek Wasteway conveyances in streamnet.org. They reflected an assortment of observations from aquatic biologists representing several organizations. These observations are based on personal observations and the availability of habitat. Additional technical support is lacking that these observations indicate the existence of a "run" of fish (i.e., a self-sustaining population) or confirmation of appropriate habitat to support a "run." Some of the conveyances may have fish habitat in the summer or at other times of the year. This habitat is not consistent throughout the year and of a quantity and quality to support a self-sustaining run.

- Using the current Points of Compliance, we are not aware of any cases of degradation of chemical, physical, or biological integrity of the receiving waters where salmonids exist.

- Within the RSBOJC service area, the new definition together with the WDFW maps has the effect of moving the Point of Compliance:

    - on Sulphur Creek Wasteway 7.1 miles upstream;
    - on Spring Creek Wasteway 1.1 miles upstream;
    - on Snipes Creek Wasteway 4.0 miles upstream;
    - on Corral Creek Wasteway 3.8 miles upstream; and
    - establishes a compliance point within Snipes Lateral 0.6 miles above where treated water is delivered to irrigators before being held behind Snipes Lateral Wasteway at Mile Post 12.29. The Snipes Lateral has no flow in the non-irrigation season. More importantly it is impassible to fish where it discharges into Sulphur Creek Wasteway.

- The movement of the Points of Compliance so far upstream eliminates the opportunity for using the drains and wasteways for additional travel time and the ability to dilute the treated water.

- Moving Compliance Points upstream will require building new water quality monitoring stations at a cost of tens of thousands of dollars.

- Moving the stations to new locations will mean the loss of comparative data from 1997 and conducting new time of travel studies.

- <u>We recommend that Ecology eliminate the definition of "Points of Compliance" and simply note that the "Points of Compliance" will be shown on an exhibit attached to each permit holder's individual permit.</u>

The majority of these points would be the same as found in the current individual permits but without reference to "Natural Waters." A field inspection by Ecology would be limited to those Points of Compliance which are relocated. Attempting to define "Point of Compliance" or "Natural Waters" sends the discussion into a legal argument with no positive outcome.

- S2. B.3.: State clearly that no seasonal samples are required when the canal/spillway is dry. For example, change the first sentence to "If all treated water is consumed and the end of the canal/spill is dry, then no monitoring or seasonal samples are required." For clarity, move the last two sentences (starting with the word "All" and ending with "consumed") after the first sentence.

- G. 1. c.: For those irrigation districts that find the actual treated spill in progress, amend or add to this paragraph "submit a detailed written report to the Department after receiving results from an external laboratory, not to exceed 15 days from the day of the spill".

- P2. A.: Delete the last word "season" from the last sentence. This will allow those districts who successfully use barricades with attached signs that comply with all posting requirements to choose this option. Additionally add the following to the sentence in the parenthesis: (such as public road crossings of canals or drainage ditches, or any other access on or off the canal).

- G18. Some planned physical changes are win-win for both parties. For example: A new re-regulation reservoir that allows for diversion of all treated water without ever spilling to the Yakima River is significant. Would positive changes that "decrease in quantity of pollutants discharged" be reported in this section or in S2.B.2.?

Thank you for the opportunity to comment on this draft permit. Tom Monroe, Operations Manager for Roza Irrigation District; Jim Trull, District Manager for Sunnyside Valley Irrigation District; or I am available to discuss any of our comments with you should clarification be needed.

Sincerely,

Elaine Brouillard

Elaine Brouillard
Water Quality Specialist

# EAST COLUMBIA BASIN IRRIGATION DISTRICT

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OTHELLO, WASHINGTON 99344

Phone 509 488 9671
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August 31, 2006



Mr. Andrew Kolosseus
Dept Of Ecology
P.O. Box 47600
Olympia, WA 98504-7600

RE: Comments on second draft Irrigation System Aquatic Weed Control NPDES Permit

Dear Mr. Kolosseus:

The East District has the following comments regarding the above-mentioned subject:

C4. Point of Compliance

This section needs considerable re-writing and additional elaboration. The definition of point of compliance as "the upper-most extent of anadromous salmonid distribution" identified by the WDFW database is inappropriate since no credible data exists to support this definition. Ecology defines salmonid distribution with terms such as "presumed", "potential", "probable" and "historic". This definition should not be used in lieu of scientific facts to designate a point of compliance. Studies by the BOR and BPA have determined that there is little potential for salmonid reproduction within the irrigation project facilities because of elevated summer water temperatures and lack of substrate. Neither the text or the map is explicit enough to define our present lower Crab Creek compliance point. This compliance point is considerably upstream of known anadromous salmonid distribution but is within or near the referenced map. The map is so vague in its relationship to topographic, geographic or cadastral features that it's useless for orientation purposes The term "salmonid distribution" should be eliminated from this permit.

At the Sunnyside meeting on August 16, 2006 the WDFW representative expressed concern about the use of copper. This concern was also raised while the first permit was being developed and as the required engineering report was being scoped. At that time the additional concerns about copper were dropped and copper was viewed on the same playing field as acrolein and xylene during this first five-year cycle of this permit. During this first five-year period this District has made a conscious effort to shift away from acrolein and xylene and move towards copper wherever possible. This shift has been documented in our annual compliance reports.

Other concerns for protection of all fish were expressed in regards to Moses Lake and Potholes Reservoir The District promotes protection of these resources through an integrated vegetation management program. The Clean Water Act (CWA) allows a mixing zone at the natural waters and exempts irrigation return flows. The continuous monitoring and lab analysis of return flows currently required for this permit does not warrant or indicate a need for additional regulation within the irrigation system Ecology is making a mess of the point of compliance subject. The District's have proven to be responsible and are being environmentally protective of the natural water bodies and should continue with already established compliance site locations.

If the concern voiced by the WDFW representative is a management level concern of that agency and not just the view of the individual attending the August 16 meeting, and if Ecology's management shares that concern, notice to that effect needs to be given.

The transition towards more copper and less acrolein and xylene has not been especially easy. It has required retraining of District personnel and PR work with water users since the end result is often a less effective level of aquatic weed control. If we are moving in a direction undesirable to Ecology, we need to know, and we need to know why.

S1.B.4 Discharge Limitations

Proposals by Ecology to define the limits as "the highest allowable discharge at any time" would be problematic to the Districts. The current permit allows the Districts to use averaging to obtain compliance levels over a 24-hour period. This practice should continue.

Sincerely,

Elayne M. Fuller

Elayne Fuller
Water Quality Supervisor

EMF/nr

Cc: SCBID
QCBID
WSWRA
Richard Lemargie
Richard L. Erickson

**WENATCHEE RECLAMATION DISTRICT**
514 EASY STREET
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(509) 663-0002
FAX (509) 665-0341

August 30, 2006



Andrew Kolosseus
Washington State Department of Ecology
Water Quality Program
P O Box 47600
Olympia WA 98504-7600

Dear Andrew:

Comments On Draft Permit

1) Concern over 25 ug/l limitation being at a concentration level in systems where velocity is between 3-5 F.P.S. and contact time is not adequate to control aquatic pest objectives.

2) When Method Detection Limit is 5 ug/l, instantaneous limit of 25 ug/l does not allow reasonable tolerance for controlling aquatic pests.

3) There are significant additional conditions, such as severity of aquatic pests in the river systems, weather conditions on treatment days and temperature, that are not factored into specified instantaneous criteria.

4) Due to low levels of concentration, I have observed that other aquatic pests are being established in our system, such as a variety of pond weeds, etc., which are at times more difficult to control.

5) New technology in filtering systems and irrigation applications require water to be as clean of aquatic pests as possible. Our permit has to help to achieve this goal as well as meet standards for water quality.

Thank you for allowing me to comment on this permit.

Sincerely,

Ricky J. Smith
Superintendent

**KITTITAS RECLAMATION DISTRICT**
CORNER OF FOURTH AND WATER STREETS
P O. BOX 276 ELLENSBURG, WASHINGTON 98926
PHONE: (509) 925-6158 FAX: (509) 925-7425
WEBSITE: www.elltel.net/krd E-MAIL: krdoffice@elltel.net

August 31, 2006

Andrew Kolosseus
Dept. of Ecology
P.O. Box 47600
Olympia, WA 98504

Andrew,

Here are comments on the draft Irrigation System Aquatic Weed Control Permit dated 8-8-2006.

**C4.** (page 4) Point of compliance change is confusing. For example, we currently sample our discharge to Johnson Creek near the bottom of our chute, but with the new permit we would be sampling several miles downstream on the creek after it joined Parke Creek, before it hit Cherry Creek where the maps show salmon distribution. At the last meeting, you said you wanted us to keep the same sampling points. If the points of compliance language in the permit changes, then we are going to be changing our sample sites, yes?

Also, as fish distribution data is added and revised by WDFW, the compliance points for the permit will change. Travel time studies will have to be redone every time a compliance point changes. Moving compliance points as WDFW data changes is going to be problematic.

**S1.B.4.** (page 5) If we are going to adjust the discharge limitations for copper to be closer to state water quality standards, then a mixing zone must be added. We are not trying to protect canals as fish habitat, so the limitations should be in the receiving water where the fish are

**S2.C.** (page 7) The comment ATK39 says that "If each treatment is being analytically tracked at the point of compliance, that meets the requirement of this section." Please add this sentence to the permit.

**G18.** (page 17) Points of compliance will change with updates to the WDFW fish distribution maps that are beyond our control. The requirement to notify Ecology and wait for their approval for a change in points of compliance needs to be dropped, or the compliance points based on the fish distribution maps need to be made permanent for the duration of the grant

CID

**Kolosseus, Andrew**

**From:** Tony Jantzer, Manager, CID [cid@elltel.net]
**Sent:** Friday, August 18, 2006 2:46 PM
**To:** Latham, Ray (ECY); Kolosseus, Andrew
**Subject:** Treating of Cascade Irrigation District Canal

Hi Ray and Andrew.

We will be treating our canal with Copper on August 22 at location 1 and 3. we plan on waiting two weeks and treating agin and then that should be it for the year.

That was an intersting meeting that we had. As far as the meeting goes there should be some provision for measuring in the main stream that treated water is being released into. Of course we should all try and get the levels of any of the chemical that we use to be as low as possible, if and entitie exceeds the stated amount in the NPDES of chemical in water being release out of a canal it may or may not harm the enviroment. It of course would be good to know if harm is accurally happening. I recommend that the permit require measureing in the canal before releasing but allow the entitie to opt for a mixing zone time measurement if the feel that the levels may exceed limits in the released water.

Tony Jantzer
Manager/Sec
Cascade Irrigation District

Quincy-Columbia Basin Irrigation District
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August 28, 2006

Andrew Kolosseus
Department of Ecology
PO Box 47600
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RE: Irrigation System Aquatic Weed Control NPDES comments

Mr. Kolosseus:

In reviewing the permit, my comments are as follows:

1. Page 4 - C4.A. Point of Compliance – The paragraph reads as follows,"The point of compliance is defined as the upper-most extent of anadromous salmoid distribution. This is identified by Washington State Department of Fish and Wildlife database found at streamnet.org". This paragraph needs to be completely changed and replaced with better information.

   One of the problems with the above mentioned paragraph is that the data from fish and wildlife is flawed and incorrect. Information gathered from Washington State Department of Fish and Wildlife (WFWD) to create this database and maps were pulled mainly from subbasin plans which were required by Bonneville Power Authority (BPA) in order to secure funding for fish and wildlife projects. I am a member of the subbasin planning committee for the Crab Creek subbasin plans and so understand how the process worked. When the Crab Creek plan was submitted to BPA for final approval, the Districts submitted comments and information to BPA explaining our concerns with the Draft plans. BPA concluded at the end of the evaluation process that the Crab Creek subbasin plan needed additional work and was not approved as a final plan. The group has never finished the project nor resubmitted the plan for approval. The information used in streamnet to set the compliance sites is using information from a "wish list" WFWD has created to obtain funding, and is not backed by any scientific facts or data; in fact, the District has collected data for more than ten years to prove the data is flawed. In the subbasin plan under the assessment results, WFWD's own report states the following limiting factors: "Lack of suitable spawning, elevated summer water

temperatures and low primary and secondary productivity were limiting factors for salmoid production. They also state that there are manmade and natural barriers occur throughout these units from the beginning of the confluence of Red Rock Coulee and continue upstream to the base of O'Sullivan Dam. Another statement was that Royal Lake Tributary received protection scores of zero as these systems currently do not support salmonids. By their own omissions they have made statements that are opposite of the maps they represent. I have attached a copy of these statements from the subbasin plan, to this letter for your review.

At the committee meeting you held in Sunnyside August 16th, Perry Harvester from WFWD also mentioned that the data was suspect and suggested we use salmonscape instead of streamnet, stating that the information was much better. I have went onto their website and had to accept a disclaimer before I was allowed to enter the website which claimed, "Due to the dynamic nature of data and the need to rely on outside sources of information, the WFWD cannot accept responsibility for errors or omissions in the data and information contained in and products produced from this application. There are no warranties which accompany the maps and information contained in or produced by this application". Why would Ecology want to accept suspect data that admits to possible unreliability or omissions? If the Districts are on the hook to produce good quality data, then state departments which want to regulate must also have good quality data that is defendable and reliable. In addition, I accepted the conditions and could not build nor zoom in on a map that showed neither the compliance sites nor any related fish presence studies.

Another problem with the compliance site paragraph is the use of "salmoid distribution". It is a flawed statement and should be eliminated from the permit. Salmon distribution while Andrew was speaking could be referred to as "possible", "probable", or even "potential". This does not show nor demonstrate sound, defendable science and needs to be eliminated, it sounds more like a wish list than scientific data.

The Districts understand Ecology's need to be responsible in ensuring compliance points are environmentally protective of natural water bodies and endangered species, however there does not appear to be any reliable, defendable data maps done by WFWD to use for this permit. The more positive side to this equation is the Irrigation Districts. They know the area, the compliance points, the places where irrigation water co-mingles with natural water bodies, and where there could be fish presence. Even more importantly, they have a five year history with the last permit, showing compliance point monitoring

and reporting. While our District can not speak for the other Districts, our District has not had many problems with compliance issues, nor have we heard of other Districts having continual problems that have not been worked on or resolved. The Districts have shown due diligence and should be considered trustworthy and reliable. With this in mind, the suggestion is that the compliance point issue be resolved by having the Districts take the responsibility of the location of compliance sites keeping in mind the need to be environmentally protective of the natural water bodies and endangered species.

2. Copper discussions.
The discussions on copper sulfate being used in softer water and the toxicity levels being lower than with hard water was an issue I have a few questions with. Where did Ecology get the data to determine what ppb of copper goes with each hardness level? I have seen many differing opinions about what copper levels are toxic according to hardness levels. In Ecology's own report #95-322, by Dave Serdar, they speak of potential impacts to many different species of fish when copper is present in both hard and soft waters. A quote from EPA in the report states, "The median value (LC50s or EC50s) of these tests was 28 ppb copper/L based upon a hardness levels between 25 and 75 mg/L." Ecology at the meeting was stating that around 3 ppb is the LC50 for softer water.

In our last permit, Ecology allowed the Districts to use averaging to obtain compliance levels over a 24-hour period. The use of averaging was a round about way of allowing a mixing zone for Irrigation Districts as is allowed in the CWA. This practice should be allowed to continue. If you do the math for most return flows, the dilution rate is so high, detention would not be above the 21 ppb allowed currently in the permit. For example, if an Irrigation District was dropping 25 cfs of Irrigation water containing 25 ppb of copper into a water body of 1000 cfs, you would have a dilution rate of 40 times or 0.625 ppb instantly. Add in the averaging and the number would drop even lower.

If you have any questions or concerns, please feel free to contact me.

Regards,

Betsy

Betsy Jordan
Safety & Environmental Officer

copper treatment. SL-1 was the only site where the pre-treatment concentration of copper (6.5 µg/L) was at the WQS.

## Potential Impacts to Fish

Many species of fish are extremely sensitive to copper in the aquatic environment. Salmonids, especially in early life stages, may be particularly sensitive, as reflected somewhat in the WQS for copper. Acute toxicity to copper is inversely related to hardness. In development of national water quality criteria, EPA lists acute toxicities from 20 tests conducted on salmonids at hardness levels between 25 and 75 mg/L (EPA, 1980). The median value ($LC_{50}$s or $EC_{50}$s) of these tests was 28 µg copper/L. Buhl and Hamilton (1990) reported 96-hour $LC_{50}$s of 15-32 µg copper/L to alevin and juvenile coho salmon tested in soft water (hardness of 41 mg/L), while the 24-hour toxicity to juvenile coho was as low as 23 µg/L. In a similar study using hard water (hardness of 211 mg/L), toxicity to juvenile chinook salmon (*O. tshawytscha*) was 54-58 µg copper/L (Hamilton and Buhl, 1990). Lorz and McPherson (1976) tested the effects of copper exposure on marine survival and found that out-migrating coho smolts had a reduced ability to migrate downstream and decreased seawater survival after exposure to copper at 20-30 µg/L.

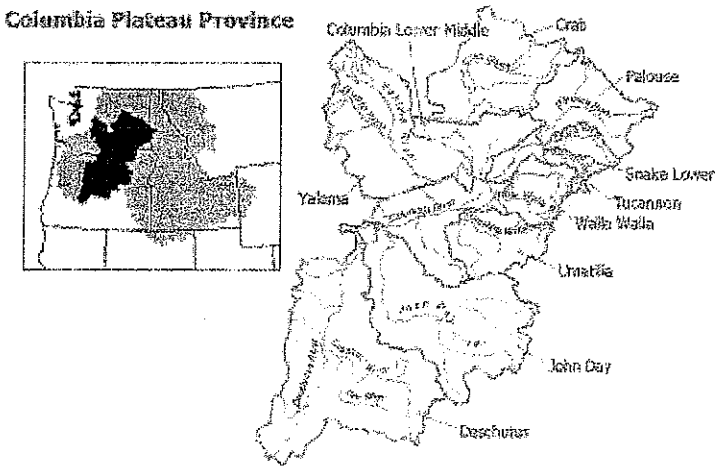
Considering these data, it does not appear that copper levels in Sylvia Lake outlet following copper treatment are protective of resident or out-migrating salmonids. Dissolved copper concentrations of 20-77 µg/L likely persisted in the outlet stream for at least 24 hours on the day following treatment. In addition, copper levels of 9.5-52 µg/L and 3.5-39 µg/L persisted at an undetermined distance downstream for two and four days, respectively. Given the hardness of water in this stream (< 50 mg/L), these concentrations do not provide a sufficient margin of safety at levels where toxicity is expected to occur.

## Copper Concentrations in Sediment

Table 2 shows copper concentrations in sediments before treatment and 18 days following treatment. Copper concentrations at SL-1 and SL-4 appeared to increase somewhat following treatment, but the differences are not outside the range to be expected due to normal sampling and laboratory variability.

There are currently no freshwater sediment quality criteria for Washington State. In lieu of state criteria, Ontario Provincial Guidelines (Persaud *et al.*, 1992) may be used to gauge the quality of sediments which have chemical contaminants. Although the Provincial Guidelines carry no regulatory status in Washington, the "severe effect level" for copper (110 mg/Kg) has been used by Ecology's Water Quality Program to

# Crab Creek Subbasin Plan




5/26/2004

Prepared for the Washington Department of Fish and Wildlife and Lincoln County Conservation District

Prepared by
KWA Ecological Sciences Inc.

completed given very tight budget and temporal constraints. The subbasin planners have developed various approaches to communicate the findings of the QHA to the general public and scientific community as a basis for the development of management strategy recommendations. The methodology was successful in its intent in describing the fundamental environmental changes that have occurred in the Crab Creek subbasin and has served as a guide for describing future management direction. The results of the QHA are summarized below and included in Appendix A.

### Assessment Units

The Crab Creek Subbasin was divided into seventy stream reaches for QHA assessment. These were grouped into five Assessment Units based upon reach similarities. The Banks Lake system is considered the sixth Assessment Unit as it is part of the Crab Creek Subbasin. However, as it is entirely the result of irrigation with the only surface connection to Crab Creek via irrigation wasteways, it was therefore not included in the QHA assessment.

## Assessment Results

### Crab Creek Assessment Unit 1 – Lower Crab Creek

#### Description

This Assessment Unit begins at the mouth of Crab Creek and and terminates at the headwaters of Red Rock Coulee. Tributaries include Red Rock Coulee and the Burkett Lake System. This Assessment Unit was selected as unique in that it includes the entire range for in which anadromous fish presence has been observed and confirmed. It should be noted that NOAA Fisheries defines the end of anadromy for Crab Creek as the upper most boundary of Assessment Unit 2 at the base of O'Sullivan Dam. Although anadromous fish may well be present upstream of Assessment Unit 1, we could find no documentation to confirm this.

This is the first of six assessment units of the Crab Creek Subbasin. Historically, mainstem Crab Creek was thought to exist in this AU, although supporting lower flows than currently. The Burkett Lake Stream system and Red Rock Coulee are thought not to have existed historically and exist now as a result of irrigation practices. Anadromous steelhead and summer/fall Chinook are known to utilize mainstem Crab Creek as a passage corridor and spawn in the lower portion of Red Rock Coulee. Steelhead are included within the Upper Columbia ESU and are listed as Endangered under ESA. Management of the Burkett Lake system is split between WDFW and GCPUD. WDFW manages Lake Lenice, Lake Nunnally, and Merry Lake (Bul3) for quality resident trout fisheries. GCPUD owns and is currently developing a management strategy for Burkett Lake (Bul1 and Bul2).

Ten specific stream reaches were identified within this Assessment Unit. These are illustrated in Apprendix B and described below:

Mainstem Crab Creek1 (CC1) – From the mouth of Crab Creek (confluence with Columbia River) extending upstream to the end of the quality riparian zone

Mainstem Crab Creek 2 (CC2) – Relatively short braided section of mainstem Crab Creek which extends from the upstream boundary of CC1 to just above the railroad crossing where braided habitat changes to channelized habitat.

Burkett Lake Stream 1 (Bul1) – From confluence with mainstem Crab Creek upstream to man-made fish barrier structure at the outlet of Burkett Lake.

Burkett Lake Stream 2 (Bul2) – From man-made barrier at Burkett Lake outlet upstream to inlet of Lake Lenice

Burkett Lake Stream 3 (Bul3) – Mainstem Burkett Lake Stream from inlet of Lake Lenice upstream to headwaters.

Burkett Lake Stream 4 (Bul4) – Tributary from confluence with mainstem Burkett Lake Stream (above Lake Lenice) upstream to source at springs

Red Rock Coulee 1 (RRC1) – From the confluence with mainstem Crab Creek upstream to the Red Rock Road (E SW) crossing

Red Rock Coulee 2 (RRC2) – From the first county road Red Rock Road (E SW) crossing upstream to the outlet of Red Rock Lake

Red Rock Coulee 3 (RRC3) – From the outlet of Red Rock Lake upstream to the base of the natural falls at Red Rock Lake inlet

Red Rock Coulee 3 (RRC3) – From and including the natural falls at the inlet of Red Rock Lake upstream to the end of the channel.

**Focal Fish Species**

- Summer/fall Chinook Salmon
- Steelhead/Rainbow Trout

**Limiting Factors**

Based upon expert knowledge and interpretation of the results of the QHA, primary factors limiting salmonid production in AU1 were determined to be:

- Lack of suitable spawning substrate due to sedimentation
- Elevated summer water temperatures
- Low primary and secondary productivity (phytoplankton, zooplankton, and benthic macro-invertebrates) although not identifiable through the QHA analysis were also considered to a likely limiting factor

**Key Findings**

**Restoration Value**: Stream reaches within AU1 were ranked as having no (or negative) restoration values as current conditions for salmonids are believed to have improved from reference conditions This is due to increased stream flows resulting from current irrigation practices Mainstem Crab Creek is believed to have been intermittent and Red Rock Coulee and the Burkett Lake Stream system were believed to have been non-existent historically

**Protection Value:** Stream reach Red Rock Coulee 4 (Upper Red Rock Wasteway) received a protection score of zero as it is currently not believed to be inhabited by salmonids and fish passage is blocked by a natural falls at the downstream end of the reach Red Rock Coulee 3 (Red Rock Lake) received a relatively low protection score as this area is managed largely for warmwater species All other stream reaches received moderate to high protection scores due to the known presence of salmonids, including ESA listed species. The Burkett Lake Stream system, although not inhabited by a anadromous salmonids, received the highest protection scores due to the high quality trout fishery it supports.

**Data Gaps**

Substantial data gaps were found to exist within this Assessment Unit These are listed below.

- Primary/secondary productivity.
- Juvenile anadromous fish presence and distribution.
- Juvenile anadromous fish survival to adulthood
- Natural production of resident trout in Lenice, Nunnally, and Merry Lakes
- Impact of listed species presence on irrigation system
- Spawning habitat in mainstem Crab Creek
- Genetic origin of anadromous fish

**Crab Creek Assessment Unit 2 - Refuge.**

**Description**

Assessment Unit 2 begins at the confluence of Red Rock Coulee and continues upstream to the base of O'Sullivan Dam This is the second of six assessment units of the Crab Creek Subbasin The upper portion is contained largely within USFWS wildlife refuge boundaries Much of the lower portion is private land with areas channelized and impacted by land use practices Manmade and natural barriers may occur throughout this AU Mainstem Crab Creek, now perennial, was believed to have existed historically but with lower possibly intermittent flows. With the exception of lower Owl Creek, all tributaries in this AU were believed to have been dry historically Several tributaries within this AU consist of lake systems connected by surface flow These systems are currently managed for resident trout or warm water species fisheries Irrigation practices made possible by the USBR Columbia Basin Project are believed to have increased stream flows in this AU above historical levels This Assessment Unit was selected as

unique because it includes the USFWS Columbia National Wildlife Refuge and the defined end of anadromy to the base of O'Sullivan Dam

Assessment Unit 2 contains a total of fourteen stream reaches. These are illustrated in Appendix B and described below

Mainstem Crab Creek 3 (CC3) - Channelized section that begins at upstream boundary of CC2 and continues upstream to just above the Corfu Road crossing

Mainstem Crab Creek 4 (CC4) – Natural channel section that begins just above the Corfu Road crossing and continues upstream to the beginning of the next channelized section

Mainstem Crab Creek 5 (CC5) – Channelized reach within Grant County that begins at upstream boundary of CC4 and continues upstream to the Adams County line

Mainstem Crab Creek 6 (CC6) – Begins at Adams County line and continues upstream to the confluence with the Black Lake Tributary.

Mainstem Crab Creek 7 (CC7) – Extends upstream from the confluence with Black Lake Tributary to the first man-made fish passage barrier located within the USFWS National Wildlife Refuge.

Mainstem Crab Creek 8 (CC8) – Extends upstream from the CC7 uppermost boundary to the outlet of Pond #1 located within the USFWS National Wildlife Refuge

Mainstem Crab Creek 9 (CC9) – Extends upstream from the outlet of Pond #1 on the USFWS National Wildlife Refuge to the base of O'Sullivan Dam.

Owl Creek 1 (OC1) – From mouth upstream to Barton Road crossing

Owl Creek 2 (OC2) – From Barton Road Crossing to the headwaters Includes June Lake, Windmill Lake, and others.

Royal Lake Tributary (RL1) – From mouth to headwaters. Includes Royal Lake

Hutchinson Lake Tributary (HL1) – From mouth to headwaters Includes Pillar Lake, Widgeon Lake, Hampton Lake, Juvenile Lake, McManamon Lake, and the Coyote and Bobcat drainages.

Black Lake Tributary (BL1) – From mouth to headwaters. Includes Upper and Lower Goose Lakes, Shoefly Lake, and Black Lake

Corral Lake Drainage (CL1) – From mouth to headwaters Includes Corral Lake, Blythe Lake, Chukar Lake, and Scaup Lake

Goldeneye Lake Tributary (GE1) – From mouth to source. Includes Goldeneye Lake and

O'Sullivan Dam emergency spillway.

**Focal Fish Species**
Salmonids:

- Summer/fall Chinook Salmon
- Steelhead/Rainbow Trout

Non-salmonids:

- Smallmouth Bass
- Largemouth Bass
- Bluegill
- Black Crappie
- Walleye
- Yellow Perch

**Limiting Factors**

Based upon expert knowledge and interpretation of the results of the QHA, primary factors limiting salmonid production in AU2 were determined to be:

- Lack of spawning substrate (sedimentation)
- High summer water temperatures (*O mykiss*)
- Barriers
- Channel confinement
- Riparian condition

**Key Findings**

**Resoration Value:** Similar to Assessment Unit 1, all stream reaches within Assessment Unit 2 were scored as having no (or negative) restoration value as current conditions have improved over reference. This is due to increased flow resulting from the USBR Columbia Basin Project. Mainstem Crab Creek in AU2 is currently a perennial stream but, although not well documented, was believed to be intermittent historically. With the exception of lower Owl Creek, all tributary systems in AU2 result from the current Columbia Basin Project, primarily seepage from O'Sullivan Dam, and did not exist historically.

**Protection Value:** The Black Lake Tributary and the Royal Lake Tributary received protection scores of zero as these system currently do not support salmonids. The Black Lake system is currently managed for warmwater species. All other stream reaches were scored as having protection value with Upper Owl Creek, the Goldeneye Lake Tributary, and the Corral Lake Drainage receiving the highest scores due to the presence of resident trout fisheries within these systems. On mainstem Crab Creek, stream reaches CC6 and CC7 received the highest protection scores. These are located within the boundaries of the USFWS National Wildlife Refuge.

**Data Gaps**
Substantial data gaps were found to exist within this Assessment Unit These are listed below

- Fish presence and distribution
- Barriers assessment
- Instream habitat assessment
- Comprehensive stream temperature data
- Extent of channel confinement
- Primary/secondary productivity

**Crab Creek Assessment Unit 3 – Potholes/Moses Lake**

**Description**
Assessment Unit 3 begins at the face of O'Sullivan Dam and includes Potholes Reservoir and wasteways, Moses Lake, Rocky Ford Creek, and the Sun Lake Chain This is the third of six assessment units in the Crab Creek Subbasin Historically, Moses Lake existed as a natural lake fed by Rocky Ford Creek and Crab Creek Potholes Reservoir did not exist historically but mainstem Crab Creek is thought to have occurred intermittently within this area The wasteways are entirely the result of recent irrigation practices and did not exist historically Anadromous fish are not present, and likely were never present in this AU Potholes and Moses Lake support quality mixed species fisheries, primarily for warm water species, but also including resident trout The wasteways do support resident trout fisheries in some sections, largely as a result of hatchery supplementation with limited natural production (Lind Coulee) The Sun Lake Chain is connected to the Crab Creek System via sub-surface flow and becomes increasingly saline downstream This Assessment Unit was selected as unique in that it consists primarily of lake habitat

Assessment Unit 3 contains a total of seven stream reaches These are illustrated in Appendix B and described below

Mainstem Crab Creek 10 (CC10) – From the face of O'Sullivan Dam upstream to the outlet structures of Moses Lake Includes all of Potholes Reservoir

Mainstem Crab Creek 11 (CC11) – From outlet structures of Moses Lake upstream to the Highway 17 crossing Includes all of Moses Lake

Winchester Wasteway 1 (WWW1) – From the confluence with Potholes Reservoir upstream to the source

Frenchman Hills Wasteway 1 (FHW1) – From the confluence with Potholes Reservoir upstream to the source

Lind Coulee Wasteway 1 (LCW1) - From the confluence with Potholes Reservoir upstream to the source

**South Columbia Basin Irrigation District**
**PO Box 1006**
**Pasco, WA 99301**

August 31, 2006

Andrew Kolosseus
Washington State Department of Ecology
Water Quality Program
PO Box 4760
Olympia, WA 98504-7600

Via e-mail to
Akol461@ecy.wa.gov

RE: Comments on the Second Draft , " IRRIGATION SYSTEM AQUATIC WEED CONTROL" permit

Dear Mr. Kolosseus:

The following are the comments that the South Columbia Basin Irrigation District would like to make for the record on the renewal of the above referenced permit

C4. Point of Compliance

In addition to the problems with the mapping errors the use of "salmonid distribution" needs further definition. "Distribution" implies that the fish may or may not be present. Andrew used "potential," "probable," and "possible" as terms associated with distribution, and such definition could potentially bring points of regulation further in-system.

The Reclamation study by Dr. Mark Bowen determined that there was very little potential for salmonid reproduction within the irrigation project facilities because of the lack of substrate (gravels, cobbles, etc.) for redd construction. It may be more appropriate to screen out or discourage fish from entering the irrigation facility (wasteways) where there is little chance for reproduction and force them to use more potentially productive natural waters.

WDFW expresses further concern for protection of freshwater fisheries in facilities like Moses Lake and Potholes Reservoir. The Districts recognize the value of multiple use for both consumptive and nonconsumptive recreation, and promote protection of these resources through integrated vegetation management programming and the proper mitigation of aquatic herbicides within the associated return flow facilities (i.e., Frenchman Hills, Winchester, and Lind Coulee wasteways). It should be noted that these valuable resources have evolved because of the management and activities of the irrigation industry and not in spite of it. Monitoring and tracking combined with extensive laboratory analysis of return flows to reservoirs do not indicate a need for additional regulation in the irrigation system.

The Clean Water Act (CWA) includes mixing zones at the natural waters and exempts irrigation return flow. Ecology has vastly exceeded the intent of the CWA by bringing regulation in-system and should reevaluate its position to more accurately comply with federal rules under CWA.

S1.B.4. Discharge Limitations

Copper is an element used as an aquatic herbicide to control algae in the Districts' waterways. This element occurs naturally in the environment, but it is also used by irrigators to help keep their systems clean and running properly. Because of these outside influences, our normal background copper levels range between 2.0 ug/L to 6.0 ug/L depending on the time of year.

During the last public meeting Ecology listed a few options to help narrow down a possible discharge limit for copper; however, Ecology failed to outline how or where the proposed numbers were derived. If those numbers came from the equations outlined in the Washington State Administrative Codes, that needs to be stated. Also, there are other factors such as pH and total organic carbon that contribute to the toxicity of copper in our environment along with hardness.

There are several studies available that help characterize toxicity of copper to fish. Large differences have been seen in the sensitivities of various species to copper. Acute toxicity (48h to 96 h LC50 or EC 50) data for freshwater range from 10 to 110,000 ug/L depending on species. Salmonidae range from 10 ug/L to 900 ug/L depending on hardness (WSDOE, 1992). Other studies have shown that levels as high as 40 ug/L and a hardness level of 20 mg/L as calcium carbonate were toxic to salmonid eggs, fry, fingerlings, and adults (Chu et al., 1978); fish tested with higher calcium carbonate levels were less sensitive. With this available information, keeping our permit levels at 25 ug/L for copper would be justified and also grounded in good science.

In the last permit, Ecology allowed the Districts to use a 24-hour average to obtain compliance levels, which is a practice used in NPDES permits for both storm water and sewage treatment plants around the state. This practice should be continued and included in our new permit for all sampling activities for copper, acrolein, and xylene.
The Districts request that Imazapyr or "habitat herbicide" be included as a parameter for labeled applications during the non-irrigation season (October 1 through March 31), with appropriate holding time or maximum concentration.

As currently defined, the maximum daily limitation as the highest allowable discharge at any time will be problematic for some districts.

The CWA provides zones for mitigation of contaminants within the natural water body and excludes irrigation return flows under Subsection 1342. Ecology standards measure the concentrations found in-system and bypass the intended mitigation.

The use of a maximum instantaneous concentration as the maximum daily limitation would prevent the use of aquatic herbicides as a management option. Ecology should consider incorporating mixing zones or the currently permitted 24-hour average concentration for this permit. Irrigation infrastructure and public property and lives would be put in jeopardy if the use of aquatic herbicides were eliminated by permit/rule.

P2.A. Posting Procedures

Recommend change to "The permittee shall post signs at the point of application for acrolein or xylene. The permittee shall post and maintain all signs prior to the application. The permittee shall use good faith and reasonable effort to ensure that posted signs remain in place throughout the application and that the public is denied access to the application site."

G15. Duty to Comply

Suggest that "constitutes a violation of the Clean Water Act" be dropped from the second sentence. Ecology's draft permit is much more restrictive, and it appears that one could be in noncompliance with the draft permit but not in violation of the Clean Water Act.

G16. Toxic Pollutants

Toxic pollutants listed in Table 1 of Committee Print Numbered 95-30 of the Committee on Public Works and Transportation of the House of Representatives may be introduced by entities unknown to the Districts. The Districts have no enforcement authority or other control of Table 1 toxic pollutants that may enter the return flow system from unknown sources. Clarify that the standards and prohibitions established under Section 307(a) of the Clean Water Act only apply to the toxic pollutants generated by the District. The Districts should not be held responsible for nonpoint sources of Table 1 toxics that could be in the stream or mobilized by normal maintenance activities such as removal of sediments and mechanical control of aquatic vegetation.

Thank you for the opportunity to submit these comments

Sincerely,

Shannon McDaniel
Secretary/Manager

State of Washington
Department of Fish and Wildlife

Mailing Address: 600 Capitol Way N, Olympia WA 98501-1091, (360) 902-2200, TDD (360) 902-2207
Main Office Location: Natural Resources Building, 1111 Washington Street SE, Olympia WA

September 8, 2006

Mr. Andrew Kolosseus
Water Quality Program
Washington State Department of Ecology
300 Desmond Drive S.E.
Lacey, WA 98504-7600

Dear Andrew:

Thank you for meeting with Perry Harvester and myself last week regarding revision of the 2002 Irrigation System Aquatic Weed Control programmatic NPDES permit. We will do our best to support your efforts to issue a revised permit in early 2007.

Firstly, WDFW's primary concern is that impacts from pesticide use on the state's fish and wildlife resources be avoided and minimized to the extent feasible. Secondly, we are concerned that monitoring of herbicide use be sufficient to encourage compliance, detect non-compliance, and provide for appropriate enforcement and adaptive management.

In that regard, we support Ecology's proposal to establish a fixed and identifiable point of compliance (POC) to better facilitate monitoring, enforcement, and adaptive actions. At the same time, it should be clear that establishing the POC at the upper extent of salmonid distribution is not protective of all aquatic resources, (especially those above the POC). However we believe it to be a workable compromise both for resource protection and for continued irrigation district operations.. We look forward to working with you and others to assure that WDFW's salmonid distribution data base is accurate and up to date for these needs. As we discussed, please call Mr. Dick O'Conner (360.902.2778) to arrange for a meeting with appropriate information management staff to further facilitate our meeting your data needs. In addition, please work with Perry Harvester (509.457.4314) regarding meeting with WDFW regional staff to further assess the appropriateness of POCs indicated prior to their being finalized.

We also support Ecology's decision to move forward with an instantaneous measurement of compliance as opposed to a 24 hour average. This, we believe, will more accurately depict peak chemical concentrations at the POC, and better allow us to assess the level of protection being provided fish and wildlife resources.

As discussed, we are also concerned that continued use of persistent and cumulative chemicals such as copper based herbicides not result in subsequent long-term accumulation in sediments in areas below the POC for irrigation district operations. Our experience with repeated applications of copper for algae treatment in lakes, for instance, indicates that accumulations can build to levels detrimental to aquatic resources. This, we believe, would also be inconsistent with Clean Water Act antidegradation requirements. We recommend that actions to acquire needed information to assess this concern be further addressed through additional permit monitoring requirements, independent assessment, or other means.

Per above, we are also concerned that monitoring results be assessed and addressed in a timely manner at a frequency to assure both compliance and adequate resource protection. We are especially concerned with potential impacts during periods of peak salmonid migration and presence and would like to see an assessment of the adequacy of prior compliance and enforcement actions and performance. If additional Ecology compliance staffing is needed, this should certainly be identified and addressed.

Thank you again for meeting with us, we look forward to continuing to work with you as this process moves forward.

Sincerely,

Carl E. Samuelson
Water and Habitat Policy
Intergovernmental Resources